Abstract:

Aim and background:

A disintegrin and metalloproteinase 8 (ADAM8) is a marker belonging to the class of ADAM family of metalloproteinase which is found to be involved in inflammation and bone resorption in periodontal disease by acting as osteoclast stimulating factor. In several systemic inflammatory diseases, elevated levels of ADAM8 are detected in human serum and other body fluids. Recently, ADAM8 was even detected in gingival crevicular fluid of patients with periodontal diseases. Hence, the aim of the study is to estimate the levels of a disintegrin and metalloproteinase 8 in gingival crevicular fluid of healthy, chronic periodontitis subjects and after treatment and their correlation with clinical parameters.

Material and methods:

Periodontal examination and collection of GCF by extracrevicular method was performed in 30 subjects selected randomly and categorized into 2 groups. Group I (healthy, n=15), group II (chronic periodontitis, n=15) and group III (after treatment, n=15). ADAM8 levels in GCF were estimated by enzyme linked immunosorbent assay (ELISA).

Results:

ADAM8 was detected in all the groups. Highest mean ADAM8 concentration were obtained for group II, whereas the lowest concentration were seen in group I. This suggest that ADAM8 levels increases proportionally with the progression of periodontal disease. The levels of ADAM8 considerably reduced in group III. We found statistical significant difference in the levels of ADAM8 between the groups (P value < 0.05). There was a significant correlation between ADAM8 levels and clinical parameters in the study group.

Conclusion:

The results of our study indicate that the ADAM8 levels in GCF are positively associated with periodontal disease, which may provide a useful tool in monitoring its progression. Nevertheless, further longitudinal studies are required with larger sample sizes in which ADAM8 levels are progressively estimated and compared to baseline values.

Keywords: Gingival crevicular fluid, ADAM8, periodontal disease.